# Bulletin

June 1983

President: Neil Kaltman, K6SMF □ Vice President: Joe Locascio, K5KT Treasurer: Don Moses, W6UY □ Secretary: Jan Perkins, N6AW Directors: Jim Stevenson, KM6B; Don Bostrom, N6IC; Jim Rafferty, N6RJ; Bob Cobb, W6CN (membership); Mike Hudgens, W6YQ (bulletin)

**Next meeting:** Thursday, June 9 at 7:30 PM sharp in the DWP Cafeteria, 111 Hope Street. Dr. Dave Morgan, K6DDO, will talk about DX awards to pursue after DXCC and WAZ; in addition, a P29 visitor is expected.

## So who needs the hassle anyway?

By Stan Brokl, N2YQ

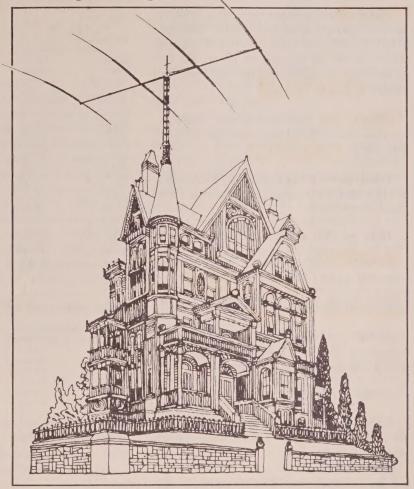
With all these restrictive antenna ordinances being put through by local city governments, the time has come to ask the big question: who needs this hassle? Hams are outnumbered by the general population 100 to 1, so why not spend our money in other ways?

Besides, I don't think *higher* is necessarily *better*. N6VI told me one antenna of his wouldn't work at 150 feet and had to be lowered to 90 feet before it would. My 20-meter antenna is only 40 feet off the ground, and I can work everything. Almost.

Another friend uses buried antennas. He has a ten-meter dipole, in fact, that is two feet underground. He claims great success with it—WAC with 10 watts, for example. (He decided to go QRP when he attempted to run a kw and discovered that the worms in his lawn frantically squirmed about making a great racket. This partially explains why the U.S. Navy in Wisconsin has the world's largest underground antenna system for communicating with submarines.)

Another advantage to low antennas is that they can have dual purposes. For instance, one can design a flagpole around a 40 or 80-meter vertical, or create a rain gutter system out of large aluminum dipoles. It also turns out that at certain frequencies and power levels a human heating system by RF excitation could be created, thereby eliminating the need to heat one's house. (As we know, microwave ovens use this principle. It would be most effective on the FM bands.)

Also by induction, low antennas on 160 and 80 meters can serve double duty as remote wireless lighting systems. I remember about 20 years ago hearing a scream at 2 AM from the woman next door. It seemed my low 80-meter antenna was periodically lighting the fluorescent fixture in her kitchen. The next day they took her away to the state hospital and her husband has been grateful to me ever since. Thus, the creation of goodwill is just one more of the many advantages of having a low antenna.



#### DX news

Don Search has an answer to the question many are asking—Will ISICK count for Spratly? "Probably not," Search said. "That's my personal opinion, of course, but my information has them going in and coming out by C-130, a military transport from a Philippine base. Something was said about their operating from an unadministered area, but Spratly is administered now—the northern islands by the Republic of the Philippines, the southern ones by Vietnam. That's what has changed since Spratly became a country in 1979, and why it should be deleted."

No sign of VK0CW or VK0HI cards as we went to press. No acknowledgement of donations, either. In fact, the only bit of news

since John Ackley's Dayton Diatribe was a one-line item in the May 3 DX News Sheet: Heard Is. Apparently about 20% of the 30K QSOs were duplicates (same band & mode).

Americans were not exactly welcomed with open arms into the 14150-14200 KHz segment of 20 meters on May 22. Assorted hecklers and jammers, mostly at points east and south of the North American continent, spent the day doing what they do best.

The DX Bulletin reports that the Mt. Athos operation by W6LAS was legit, this according to SV1JG. Only about 200 QSOs on 20 SSB were made, however, the majority in Europe.

Remember "HCJB—The Voice of the Andes," the birthplace of the cubical quad? DXNS reports an operation from the site June 11-12. They'll be signing HC1JB, the call of the inventor of the antenna, the late Clarence Moore. Hearing them shouldn't be a problem, especially on 21445 where a 24-element quad will be in use 00-17z and 23-00z. They'll be on 14245 as well, 09-00z, with a steerable array that has 24 dB gain. Forty and ten-meter stints are to be 24 hours a day. A three-element yagi will be utilized on 28545, a dipole on 7045. Look for some Oscar 8 activity too. Cards go to HC1JB, Casilla 691, Quito, Ecuador.

Continued on page 2

## W6TOG is silent key

Jerry Ginsberg, W6TOG, died May 10 of a stroke. He was 40 years old.

A long-time DXer, he was self-employed, his efforts devoted to the manufacture and sale of his W6TOG Transceiver Modification Kits, which are marketed across the U.S.

Ginsberg is survived by his wife and two children.

#### DX news

#### Continued from page 1

FB8WI making himself available, which is quite a switch after the elusive Georges, FB8WG. WI has been on 40 CW around 1330, on 20 CW as early as 1245z. He was heard May 16 calling CQ on 14025 with no takers. Cards to F6GXB.

FB8ZQ also has maintained visibility. Around 0230z he's been observed on 7009 and 14021. QSL F6GXB.

Trindade by CP6EL June 5-15. Socorra. PY1EFM/PY0, was originally scheduled to leave May 30.

4K1F on 3501 at 0315z, on 7006 at 0350.

JX5DW 14025 at 0215, and has been reported on 40 CW; cards to RSGB, or you can go direct: Bjorn Dommersnes, N-8013 Jan Mayen, Norway.

ZD9BV, ZD9BX and ZD9YL can be found on 15 SSB 18-20z most days. Not much CW activity reported of late.

YI1BGD turns up around 14z on 14210.

BY8AA has been on 15 CW, 21039 around 01z; BY1PK on 20 CW, 14023, 14029, 14040, as late as 0630z.

Don't forget the W6AM Open House Sunday, June 12. Complete directions were included in last month's SCDXC Bulletin.

## Low pass filters needed in China

#### By John Harris, W6MUM

In a recent QSO, Tom Wong, VE7BC, told me there is a distinct need for low pass filters among the several BY stations he is helping to initiate in China. This TVI problem may be one reason that the BY stations do not yet operate SSB.

Club members and others who have low pass filters available are asked to send them to John A. Johnson, W7EKM, 2418 D Street, Bellingham, Washington 98225. He will see that they reach the proper location in China.

## ARRL high claimed scores

This list is most likel cores may be missing	y not complete. Some	W7XN 242,064 K2QIL 204,000 WA1FCN 200,640 W0JLC 190,755
	—AA2Z/K1WJ	N0DH
W/VE	20 single band	101100 100,007
VV/VL		160 cingle band
	N2PP 281,316 788119	160 single band
	KI3P/1259,689	W8LRL 6300-60-35
PHONE Single op—high power	K5GA 228,036 NA5C 191,052	WA2SPL4650 N4SU2304
J6V (N6KT)		80 single band
2,035,224—2458—276	15 single band	oo single band
V1ZM (K1ZM) 1,702,476—1444—393	W0ZV 410,958	K1PT 88,038—402—73
1AR 1,490,290	-1343-102	KM1H 45,201 K0RF 26,700
V9RE 1,418,832	K3LR	N7DF 19,764
VA8YVR 1,327,416 I2LT 1,314,300	K1UO	
V1RR 1,299,210		40 single band
M6B 1,245,114	10 1 1 1 1	
6HNZ 1,208,928	10 single band	NA5R (N5EA) 139,725
l1GL 1,167,936 √5XZ 1,057,203	WA6DBC 207,306	—621—75 K1UO 129,822
15JJ 1,037,043	-1047-66	AD8C (AD8P) 92,430
K1A 978,588	WA5THS 157,383	W5JW 86,292
17TT 916,776	K5RC (KN5H) 149,688 WD0ASM 137,160	
2RD 901,320 3NZ 845,529	WD0A3M137,100	20 single band
E6OU 813,795		
Q4I 808,236	Multiop, 1 transmitter	VE3BMV 198,168
V3XU	W3BGN 1,621,290	—718—92 AI7B 127,125
5RX	-1445-374	K8NA 127,089
16OJ 735,336	K6XT 1,368,639	W1YN110,946
1TO 730,158	W3MA 1,093,587 K3TUP 1,086,012	
	13101 1,000,012	15 single band
Single op—low power	Multiop, 2 transmitters	W0ZV 184,500 —750—82
V2TZ 361,005-587-205	K2TR 2,812,284	W5VX 173,016
A2AEV 273,894 B3WX 196,392	-2292-409	K6LL/7 154,770
I8CXX 167,520	W4QAW2,803, 110 K4CG2,099,097	N2PP 151,704
VA4PFN/2 153,984	AB0I 2,007,990	
K1L	,	10 single band
A6BIM 131,967 V3ARK 127,746	M. I.C	HIDATDII 24 (00
2QIL 122,112	Multiop, unlimited	WB4TDH 34,608 20656
V3CM 108,927	N2AA 5,675,085	W8WPC (N9AG) 29,574
VB8WZT 100,812	-3471-545	K5TSQ 24,336
	K1OX 5,099,220	
Simple on OPP	K2UA 4,989,606 N5AU 4,727,712	Single op—QRP
Single op—QRP	1,0110 1,727,712	onigie op Qiii
VB4BBH 103,680		WB4BBH 94,644
-256-135	CW	—239—132 AA4AK 90,420
VD4AVY	Single op-high power	W9OA54,978
76CN	3	W9PNE
V6YVK 61,104	N2LT 1,575,600	
	—1616—325 W1KM 1,512,393	Mulaina I Amananiatan
	W1ZM (K1ZM) . 1,436,010	Multiop—1 transmitter
160 single band	N4AR 1,350,900	W3BGN 1,537,746
F1VV 2077 20 00	K1JX 1,319,316	1558 329
E1YX 3276—39—28 B1A	K1TO 1,296,873 N3BB 1,128,204	N4UM 1,137,063
2XA1104	K1BW 1,113,693	K5LZO 1,057,968 K8ND 1,046,406
	W1RR 1,047,696	
	N3AD 1,035,783	
80 single band	N8II 1,028,160 N3RS 1,012,476	Multiop—2 transmitters
DOM 44 204 000 71	W1RM958,386	K5RC 2,659,866
R2N 44,304—208—71 JA4SVO 25,137	K3LR953,316	-2321-382
VA45VO	K1DG 950,232	K4CG 2,119,680
E4G 16,800	W9RE	K3VW 1,663,092 K2VV 1,489,464
	W3XU	112 v v 1,407,404
	W3VT 820,638	
40 single band	K2LE	Multiop—unlimited
6BV 105,672—629—56	K3OO	N2AA 4,643,058
76AQ (WA6OTU)	KZ5M 738,045	—3409—454
54 400	1110 4 D	

### Non-W/VE

Single op-low power

N5AW . . . . . . . . . 445,680

W2TZ ..... 365,001

SCDXC members appear to have won both modes.

PHONE Single op
ZF2FL (N6RJ) 6,614,724
-7022-314 V3CH (K0GU) 6,580,035
<del>-7385-297</del>
8P6J (N6TJ) 6,079,200 6800298
HH2CQ (K4JPD) 4,455,270
VP2MBA 4,081,230
KH6ND 3,041,595
KH6RS (Al6V) 2,699,250 LU1BR 2,586,438
LU1BR 2,586,438 K3UOC/YV4 2,170,674
KH6BZF (K8HQR)
PY5EG 1,840,552
CN8CO (W3EMH)
Multiop-1 transmitter
XE1MDX 4,311,801 -5343-269
V2AXA 3,532,554
-5142-229
ED9EA 3,000,330
—3922—255 ZF2GW 2,876,385
OA8CW 2.856.960
XE2EBE 2,708,910
I0WDX 2,155,044
I5MPN 1,847,460
IOIJ
H44SH 1,506,744
ZL1UC 1,284,480
JG1ZUY 1,162,944
Multiop-2 transmitters
VP5KMX 9,958,413
_ 10 277 _ 323
VP5KMX 9,958,413 —10,277—323 YV3BRF 6,810,072 —7699—296
—10,277—323 YV3BRF 6,810,072 —7699—296 CN8CX 4,201,128
-10,277-323 YV3BRF 6,810,072 -7699-296
—10.277—323 YV3BRF
—10.277—323 YV3BRF
—10,277—323 YV3BRF
—10,277—323 YV3BRF 6,810,072 —7699—296 CN8CX 4,201,128 KL7RA 1,729,887  Multiop-unlimited VK2WU 3,261,996 —4769—228 JA9YBA 1,695,267
—10,277—323 YV3BRF
—10,277—323 YV3BRF 6,810,072 —7699—296 CN8CX 4,201,128 KL7RA 1,729,887  Multiop-unlimited VK2WU 3,261,996 —4769—228 JA9YBA 1,695,267 JA7YAA 1,618,704 I3EVK 1,577,970 CW
—10.277—323 YV3BRF 6,810,072 —7699—296 CN8CX 4,201,128 KL7RA 1,729,887  Multiop-unlimited VK2WU 3,261,996 —4769—228 JA9YBA 1,618,704 JATYAA 1,577,970 CW Single op
—10.277—323 YV3BRF
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—10.277—323 YV3BRF
—10.277—323 YV3BRF 6,810,072 —7699—296 CN8CX 4,201,128 KL7RA 1,729,887  Multiop-unlimited VK2WU 3,261,996 —4769—228 JA9YBA 1,618,704 I3EVK 1,577,970  CW Single op 8P6J (N6TJ) 4,050,144 —4704—287 VP2EU (K8MR) 4,050,144 —4704—287 VP2EU (K8MR) 3,421,285 —3915—293 P42J (W1BIH) 3,424,128 —3856—293 SM0GMG/CT3 2,689,638
—10.277—323 YV3BRF
—10.277—323 YV3BRF 6,810,072 —7699—296 CN8CX 4,201,128 KL7RA 1,729,887  Multiop-unlimited VK2WU 3,261,996 —4769—228 JA9YBA 1,618,704 I3EVK 1,577,970  CW Single op 8P6J (N6TJ) 4,050,144 —4704—287 VP2EU (K8MR) 3,620,535—4091—295 HH2VP 3,441,285 —3915—293 P42J (W1BIH) 3,424,128 —3856—296 SM0GMG/CT3 2,376,360 K8WW/VP9 2,376,360 K8WW/VP9 2,234,793 KH6ND 1,931,975 K3UOC/YV4 1,654,029 I2UBI 1,252,119 VE3DFD/J7 1,255,255 HK1AMW 1,007,298 Multiop-1 transmitter
—10.277—323 YV3BRF 6,810,072 —7699—296 CN8CX 4,201,128 KL7RA 1,729,887  Multiop-unlimited VK2WU 3,261,996 —4769—228 JA9YBA 1,618,704 I3EVK 1,577,970  CW Single op 8P6J (N6TJ) 4,050,144 —4704—287 VP2EU (K8MR) 3,620,535—4091—295 HH2VP 3,441,285 —3915—293 P42J (W1BIH) 3,424,128 —3856—296 SM0GMG/CT3 2,376,360 K8WW/VP9 2,376,360 K8WW/VP9 2,234,793 KH6ND 1,931,975 K3UOC/YV4 1,654,029 I2UBI 1,252,119 VE3DFD/J7 1,255,255 HK1AMW 1,007,298 Multiop-1 transmitter
—10.277—323 YV3BRF 6,810,072 —7699—296 CN8CX 4,201,128 KL7RA 1,729,887  Multiop-unlimited VK2WU 3,261,996 —4769—228 JA9YBA 1,618,704 I3EVK 1,577,970  CW Single op 8P6J (N6TJ) 4,050,144 —4704—287 VP2EU (K8MP) 4,050,144 —33620,535 —4091—295 HH2VP 3,441,285 —3915—293 P42J (W1BIH) 3,424,128 —3856—296 SM0GMG/CT3 2,689,638 8P6GG (N8DCJ) 2,376,360 K8WW/VP9 2,347,93 KH6ND 1,931,975 K3UOC/YV4 1,654,029 I2UBI 1,252,119 VE3DFD/J7 1,125,525 HK1AMW 1,007,298 Multiop-1 transmitter AH6BK 2,816,940 —3530—266
—10.277—323 YV3BRF 6,810,072 —7699—296 CN8CX 4,201,128 KL7RA 1,729,887  Multiop-unlimited VK2WU 3,261,996 —4769—228 JA9YBA 1,618,704 I3EVK 1,577,970  CW Single op 8P6J (N6TJ) 4,050,144 —4704—287 VP2EU (K8MR) 3,620,535—4091—295 HH2VP 3,441,285 —3915—293 P42J (W1BIH) 3,424,128 —3856—296 SM0GMG/CT3 2,376,360 K8WW/VP9 2,376,360 K8WW/VP9 2,234,793 KH6ND 1,931,975 K3UOC/YV4 1,654,029 I2UBI 1,252,119 VE3DFD/J7 1,255,255 HK1AMW 1,007,298 Multiop-1 transmitter

	-3330-200
TI2BEV	2,666,328
	-3304-269
IOMGM	1,777,185
F3TV	1,597,296
YT3M	1,293,204

#### Multiop-2 transmitter

### VP5FUX . . . . 6,155,364 --6794--302

#### Multiop-unlimited

YU7BCD ..... 1,450,446 EA3MM .....

K3SA.....714,324

W3LPL

W9ZRX....

K1XA ..... 43,875

#### An update

## Southeast DXing

By Jerry Hagen, N6AV/4

After more extensive on-band experience, here's an update on the comparison of DXing in the Southeast vs Southwest. This report provides additional detail on long path, and 80 and 40-meter DXing.

Long path

The normal winter long path on 20 and 40 meters extends over VR6 (210 degrees) around to VK9 (Cocos-Keeling), 4S7, VU and up to UL7/UM8. The noticable difference from W6 is that from the Southeast we cannot work East Africa (zones 36, 37), the Mideast (20, 21), or Eastern Europe (15, 16) via long path on a regular basis. Our morning LP is pretty dull except for an occasional 4S7, 8Q7 or VU. This path shifts over into the zone 24 and 26 area in the spring. Our winter evening LP extends over LU through YB, DU, VS6 and up to JA if conditions are good. After two long path seasons here in W4, I'll take the W6 LP on 20 meters any day because of the greater variety of DX available.

#### 80 meters

As reported last year, the W1, W2 and W3 areas have a better shot at Europe and the Mideast than do the W4s, but the Caribbean/ South America and Pacific path is easier for W4. Disappointing as it may sound, Europeans do not always have good signals at my QTH. They are usually quite weak with the exception of the big contest stations. Last year I reported that JAs were not too difficult to work on 80; well, this year it has been different. Conditions on 80 during the CQ CW test and in general for this winter have been far below last year. The best



## Bulletin

Published monthly by the Southern California DX Club.

**Editor** Mike Hudgens, W6YQ

Jan Perkins, N6AW Stan Brokl, N2YQ Chris Conner, KA6ISX

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weeks were the one preceding the CQ CW test and the first week in February. During these periods European, Mideast, South America and JA signals have been good.

In October UK7LAA came through on LP at sunup (1100z) but I could not crack the pileup. I have also heard YB5AES on our sundown LP, but with a marginal signal. Some of the locals reported working VS6DO on the sundown LP in December. Good DX heard or worked on 80 includes OD5LX, HZ1AB, 5H3BH, TR8IG, LU3ZI, 5T5T0, 3V8YQ, UK2BAS/U6G, YB5AES, T32AF, VK6HD, 4X4 and Erik at a number of his Pacific stops. The tough zones from this area appear to be 18, 23, 24 and 26. My general DXing opinion would be to rate 80 meters as better from W4 than W6 due to the European/Mideast short path.

#### 40 meters

The 40-meter band seems to be more year-round from W4, with Europeans being worked right through the summer. This year I have noticed many more morning LP openings to zones 22 and 17/18, with JAs being scarce. During December and January, some good LP was heard at sunup (12z), including UA0YAE, UM8, UL7, UA9, VU and 9N38. This is the same area as heard on our sunrise LP on 20 meters. During our sunset LP I have heard JA, UA0, UA9, VK9YM, VK and JD1. Forty is a great band from W4, but I hear W6s working out very well on short path, and the LP is better from the West Coast than the East Coast. This band is about even!

That's what it's like from the Southeast.

## Letters

Editor-

Our bureau is staffed with volunteers, from the first sorting of the QSLs to the final mailing to California hams. They give their time and effort to see that thousands of hams in California and around the world get their QSLs. We regret it when those hardworking volunteers are maligned by a few in the amateur community who never bother to check with the bureau to see if there is a specific reason for the problem.

It would be a refreshing change to see you put something positive about the bureau in the SCDXC *Bulletin*, but I cannot force an editor to print something that is not sensational, but truth.

Archie Willis, W6LPJ General Manager, 6th District DX QSL Bureau

W6LPJ said by telephone that in spite of the bureau's large volume of cards—in March alone, for example, 30,000 were received from JARL—it is running smoothly and valid complaints (where the bureau actually is at fault) come to no more than three a month. Archie Willis said he will respond to anyone with a complaint. Write

to him at P.O. Box 1460, Sun Valley 91352, and enclose an SASE. Send a copy to Jay Holladay, 5128 Jessen, La Canada 91011.

Editor-

I agree with you about the TS930S. Have had mine since last October and so time to evaluate it. For the past eight years I have used the CX7A and find the TS930S better in many ways. The 10-cycle readout is amazing—practically no drift.

Roger Mace, W6RW

-Ed.

Editor-

A heartfelt thanks to SCDXC for including me on your Honorary Life Member list. I think it an honor to be among the truly outstanding group of DXers to whom you have extended this special recognition. It is quite humbling too.

The two years I lived in Los Angeles, I experienced an active membership in the SCDXC. The friends I made there are forever. The club is literally filled with outstanding DXers. It's truly a unique organization, and I salute the entire group—past and present—as the real celebrities of DX. I extend my deepest gratitude for letting me share in your membership.

Vince Thompson, K5VT

#### Minutes of the last meeting

By Jan Perkins, N6AW SCDXC Secretary

The May meeting was held at the Spaghetti Factory in Hollywood. Happy Hour began at 6 for the stouthearted, and spaghetti dinners were served at 7:45.

At 8:40 the meeting was called to order by Joe Locascio, K5KT, SCDXC vice president. He introduced I0MGM and said the Knights of Malta would be active in early June.

Terry Baxter, N6CW, was the featured speaker. He had prepared a slide presentation of his VP2V operations from the British Virgin Islands. Unexpectedly, the day before the meeting, he received a set of slides from the PY0 St. Peter and Paul Rocks operation last fall

After an excellent program covering both locations, the drawing for prizes was held.

An AEA Moscow Muffler went to W6RT; AEA Isopole to KC5JK; MFJ dual display clock to KB6HW; HyGain BN86 balun to K6SVL; Drake 300HP to W6CN; Complete Idiot's Guide to DX to WA6POZ; 1983 ARRL Handbook to WA6TLA; Interference Handbook to N6HL; New Weather Satellite Handbook to N6AA; ARRL Antenna Handbook to KM6B; Solid State Design to WA6GUA; ARRL Electronics Data Book to KM6B; ARRL RFI Book to KM6B; 2 sets of 4 Dodgers vs Giants tickets plus parking to W6YLJ and KB6HW.

The meeting was closed at 10:05.

ΣZ9S6 059M - JAY O'BRIEN P.O. BOX 7ØØ RIO LINDA, CA

> Michael Hudgens, W6YQ 10103 Lynrose Street Temple City, CA 91780







#### Contest calendar

June 18-19	. All Asian Phone
July 9-10	Radiosport
July 16-17	SEANET CW
Aug 13-14	WAE CW
Aug 13-14	. SEANET Phone
Aug 27-28	All Asian CW
Sept 10-11	WAE Phone
Oct 29-30	CQWW Phone
Nov 12-13	WAE RTTY
Nov 26-27	CQWW CW

-W1WY

## **Activity reports**

**W6RT:** TR8JD (via F6AJA) 7002 0159, VQ9CI (via KE4OC) 14218 1542 (April 28); **1S1CK** 14265 1436 (May 6); **KC6DT** 7005 1257 (May 16); **VP8ANT** 7004 1258, **FB8WI** (via F6GXB) 7005 1307 (May 18); **BY8AA** 21049 0110, **VP2MM** (via AD1U) 7008 0230, **BY1PK** (YU2DX) 14023 0628 (May 19).

(Deadline for next month: July 1)

#### State of the bands

Summer is coming, and with it the inevitable short openings, sporadic long path, weak signals and high noise levels. This will remain the order of business until early September.

Ten meters has been very erratic this spring. Look for Africa after 18z and Asia after 23z. South America can be copied most of the day, but fades fast about 0z. South Pacific stations are heard—not with strong signals—from 20-04z.

Fifteen meters still opens to Europe around 17z, and copy is sometimes possible until 20z. Africa peaks about when the Europeans fade. Look for deep Central Asia openings around sunset, 03-04z.

Twenty meters offers lots of activity as the other bands become more difficult. Occasional long path occurs from 1330-17z, and zones 21 and 22 appear around 13-14z. Deep zone 17 activity is strong around 03z. JAs and Southeast Asia around 05z are good bets.

Forty meters is still full of surprises. You should hear some Indian Ocean long path around 1330z, along with the occasional Central Asian opening (not strong). Check our sunset (03z) over the Pole for zones 17/21 and a couple of hours later listen for Europe.

Eighty meters is getting tough about now. Look for Africa after our sunset, and the Pacific before our sunrise.

-N6AW

## **N4XX** propagation

A, H, L, B, D-Above, High, Low, Below, Disturbed

4	H	12	H	20	H	28	H/L
5	H	13	В	21	H	29	L
6	H/L	14	L	22	L	30	H
7	В	15	Н	23	L	1	H
8	В	16	H*	24	H	2	H
9	В	17	L	25	H	3	H/L
10	В	18	L	26	H	4	В
11	H/L	19	L	27	В	5	В

<sup>\*</sup>Begins 54-day forecast

#### Classified

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